Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 1 of 32

132

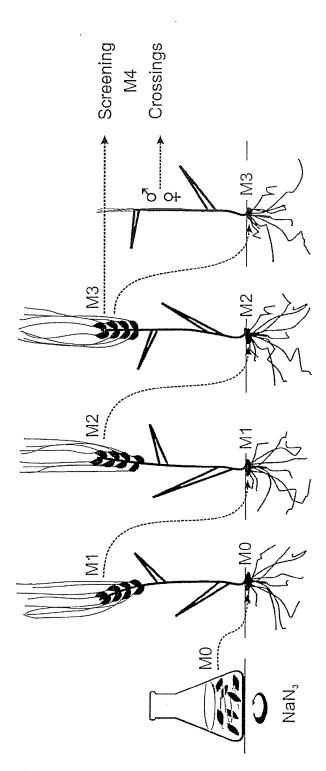


Fig. 1A

Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

Attorney Name: Denise M. Kettelberger

Phone No.: 612.371.5268

Sheet 2 of 32

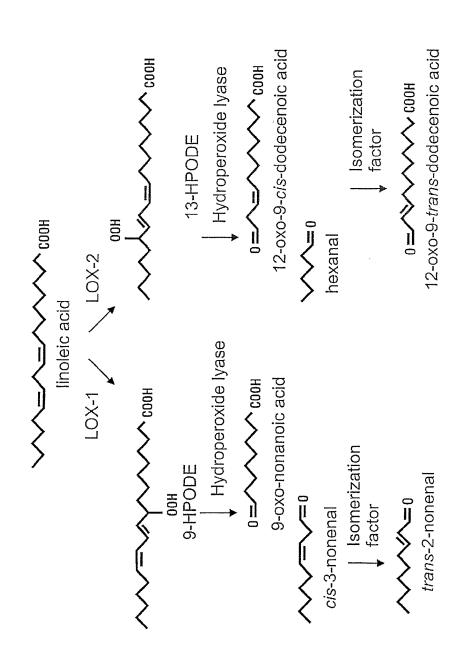


Fig. 1B

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

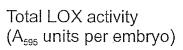
Attorney Name: Denise M. Kettelberger Phone No.: 612.371.5268

Sheet 3 of 32

12

Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE Attorney Name: Denise M. Kettelberger Phone No.: 612.371.5268
Sheet 4 of 32

32



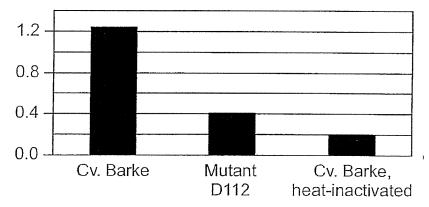


Fig. 2

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 5 of 32

Total LOX activity (A₅₉₅ units per embryo)

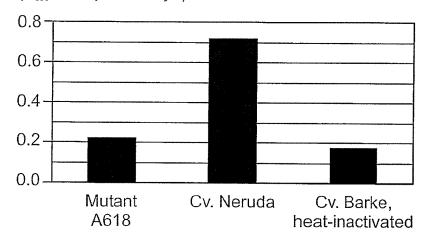


Fig. 3

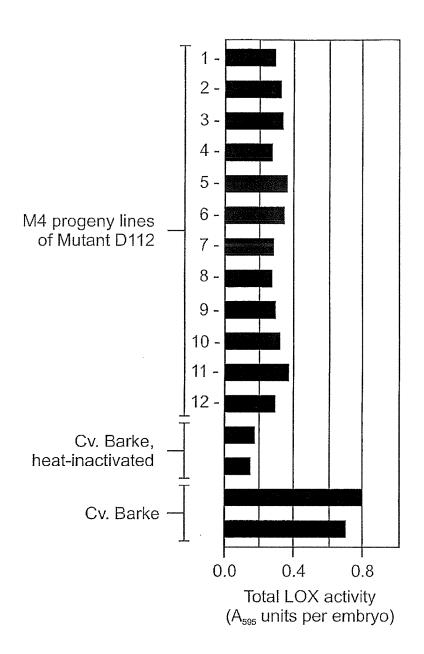


Fig. 4

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

Attorney Name: Denise M. Kettelberger Phone No.: 612.371.5268

Sheet 7 of 32

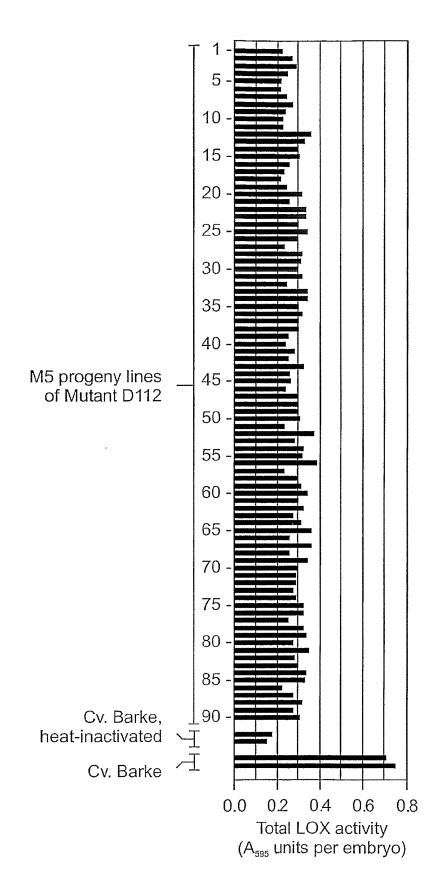


Fig. 5

Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

Attorney Name: Denise M. Kettelberger Phone No.: 612,371,5268 Sheet 8 of 32

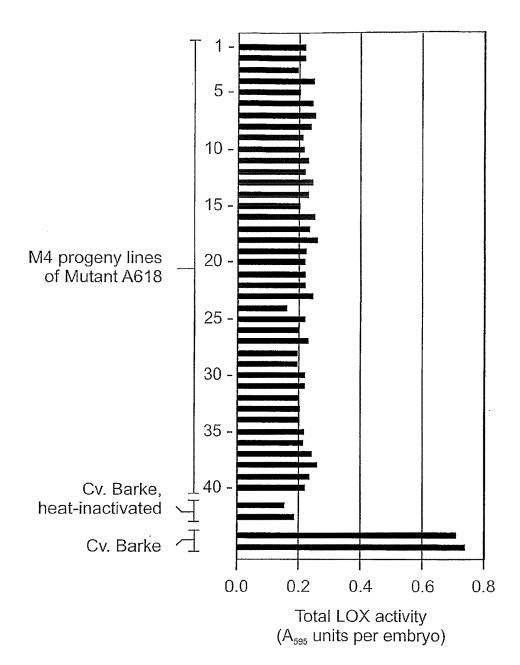


Fig. 6

Inventor: BREDDAM et al. PCT/DK2005/000160 Docket No.: 12845.0009USWO

Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

Attorney Name: Denise M. Kettelberger

Phone No.: 612.371.5268

Sheet 9 of 32

3/32

6

10 11 12 13 14 15 16 LOX-1 ---

Fig. 7

Inventor: BREDDAM et al. Docket No.: 12845.0009USWO

Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268

Sheet 10 of 32

32



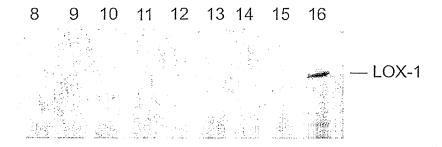


Fig. 8

Docket No.: 12845.0009USWO Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

Attorney Name: Denise M. Kettelberger

Phone No.: 612.371.5268

Sheet 11 of 32

./32

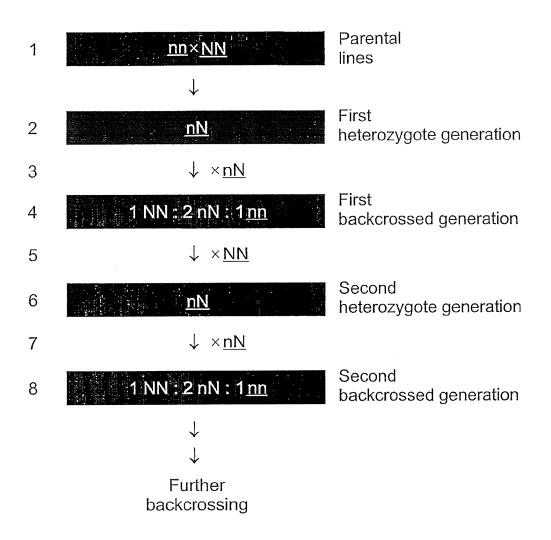


Fig. 9

Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

Attorney Name: Denise M. Kettelberger

Phone No.: 612.371.5268 Sheet 12 of 32

12/32

3 4 5 6 7 8 - LOX-1 10 11 12 13 14 15 16 9 the wife of and an area of the state of 18 19 20 21 22 23 24 — LOX-1 25 27 28 29 30 31 32 26 promoter to a respect to the second s 33 37 38 39 40 41 42 43 44 — LOX-1 48 49 50 51 52 53 54 — LOX-1

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 13 of 32

3/32

PCT/DK2005/000160

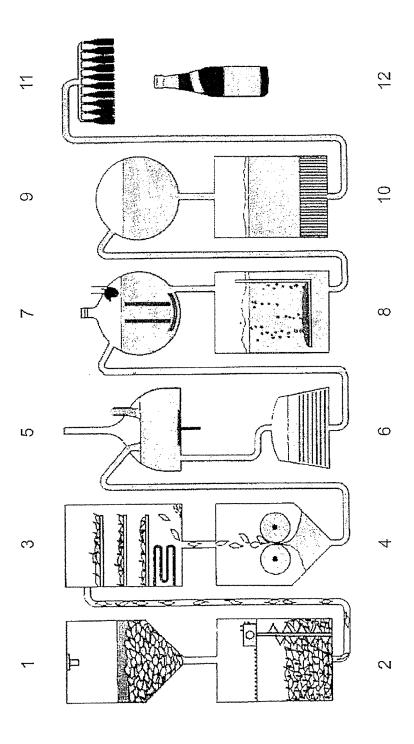
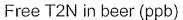


Fig. 11

Inventor: BREDDAM et al.
Docket No.: PENDING00074615
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

Attorney Name: Denise M. Kettelberger Phone No.: 612.371.5268

Sheet 14 of 32



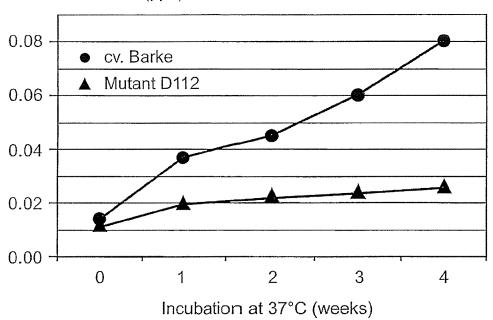


Fig. 12A

Attorney Name: Denise M. Kettelberger Phone No.: 612.371.5268

Sheet 15 of 32

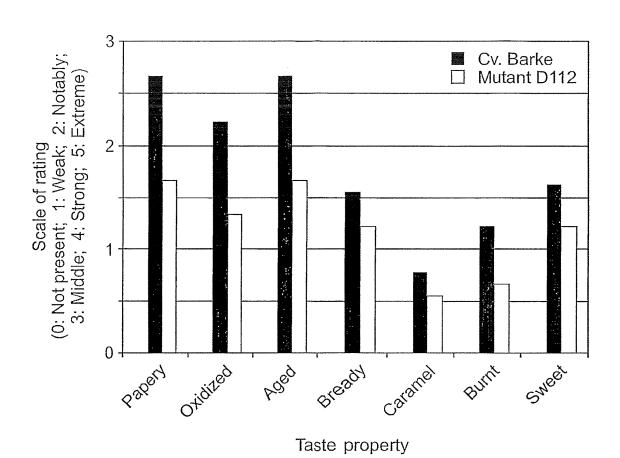


Fig. 12B

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 16 of 32

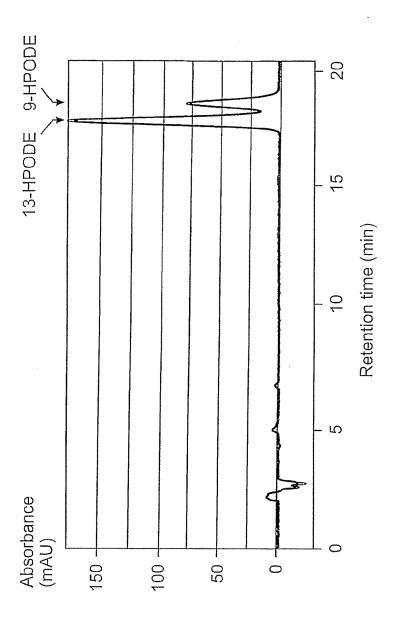


Fig. 13A

.7/32

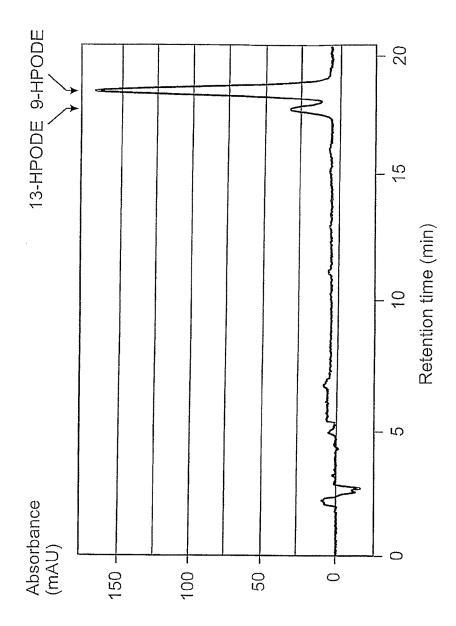


Fig. 13B

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 18 of 32

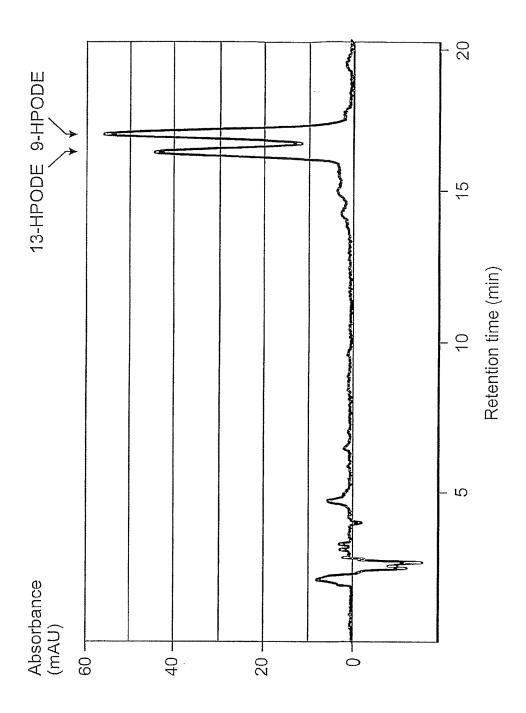


Fig. 13C

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 19 of 32

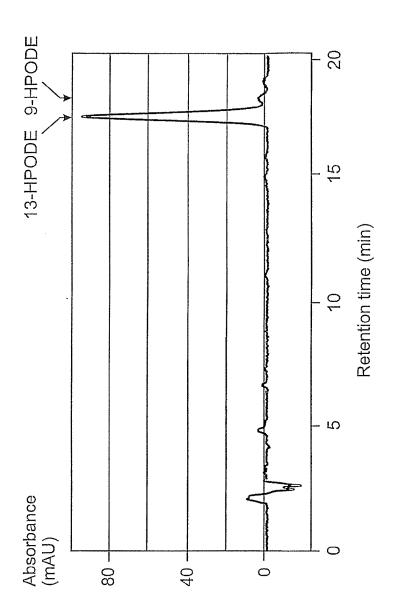


Fig. 13D

Attorney Name: Denise M. Kettelberger Phone No.: 612.371.5268 Sheet 20 of 32

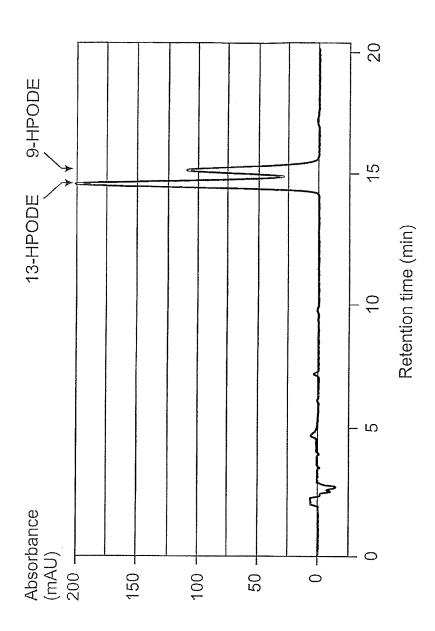


Fig. 14A

'32

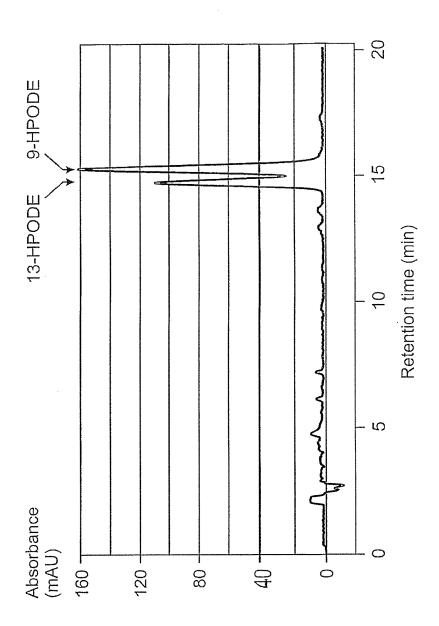


Fig. 14B

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 22 of 32

32

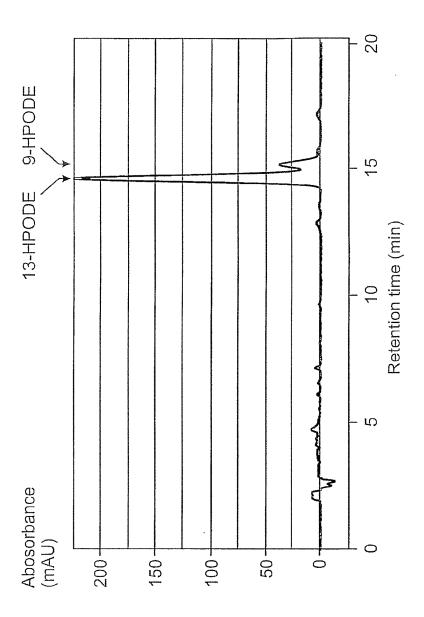


Fig. 14C

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 23 of 32

^{'32}

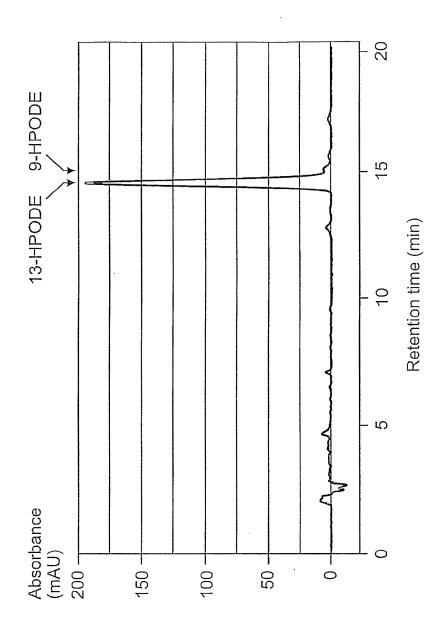


Fig. 14D

Attorney Name: Denise M. Kettelberger

Phone No.: 612.371.5268 Sheet 24 of 32

132

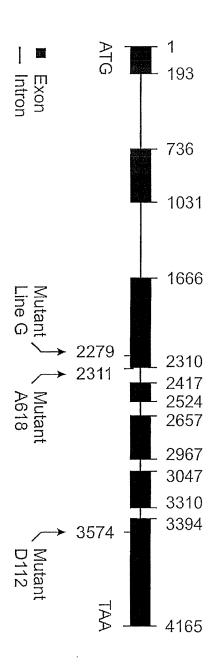


Fig. 15

		Gene		Protein	C
	Change	Position in genomic DNA	Result	Length in amino acids	Mass in kDa
Wild-type				862	96.4
Mutant A618	G→A	2311	RNA splicing error; translational stop	366	44.7.
Mutant D112	G→A	3574	Translational stop	665	74.2

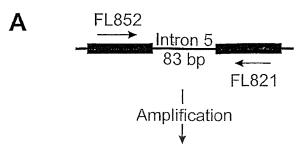
Fig. 16

Attorney Name: Denise M. Kettelberger

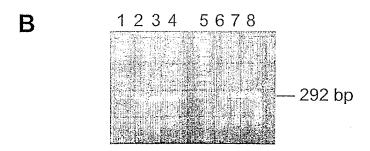
Phone No.: 612.371.5268

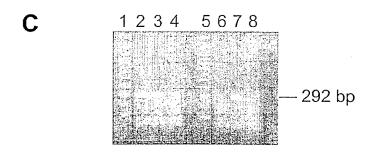
Sheet 26 of 32

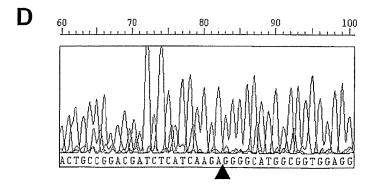
!6/32



DNA template: 375-bp PCR product RNA template: 292-bp PCR product







Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

Attorney Name: Denise M. Kettelberger Phone No.: 612.371.5268

Sheet 27 of 32

<u>2</u>7/32

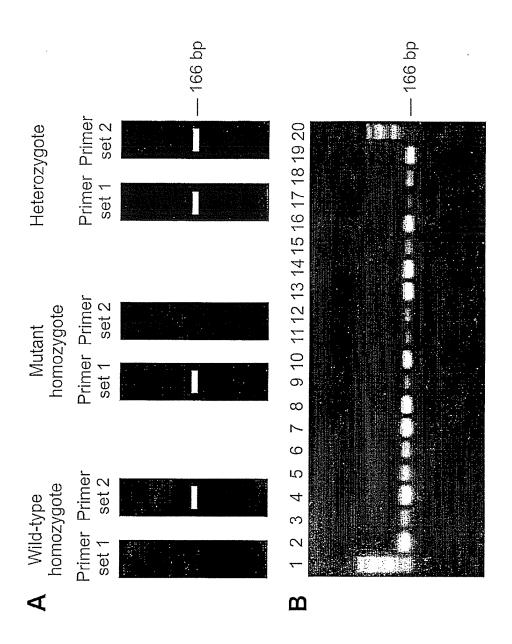
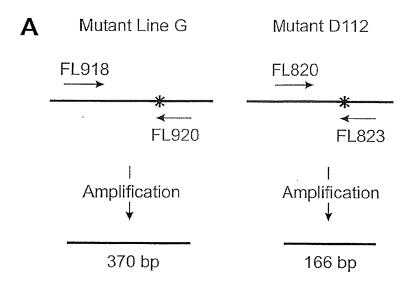


Fig. 18



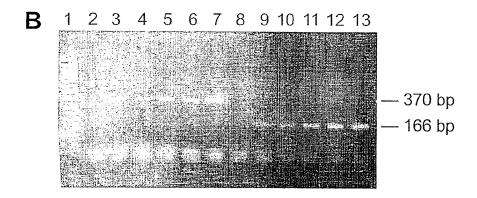


Fig. 19

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 29 of 32 PCT/DK2005/000160

32

2 9 10 11 12 13 14 15

Fig. 20

Inventor: BREDDAM et al.
Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE
Attorney Name: Denise M. Kettelberger
Phone No.: 612.371.5268
Sheet 30 of 32

30/32

PCT/DK2005/000160

4 UBI promoter	BAR N
UBI promoter	BAR N



→ Int ← N **UBI** promoter

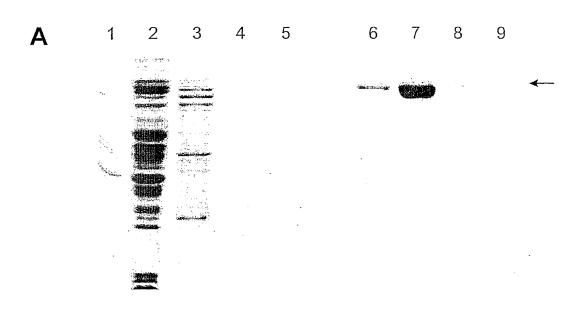
Fig. 21

Inventor: BREDDAM et al. Docket No.: 12845.0009USWO

PCT/DK2005/000160 Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE Attorney Name: Denise M. Kettelberger Phone No.: 612.371.5268

Sheet 31 of 32

/32



B Relative LOX-1 activity (%)

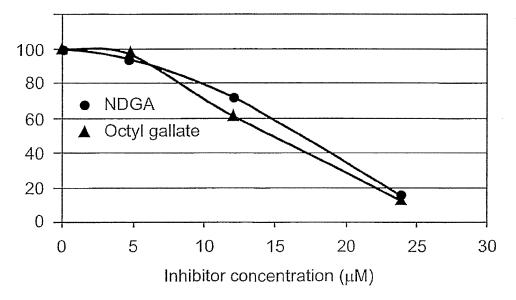


Fig. 22

Docket No.: 12845.0009USWO
Title: BARLEY FOR PRODUCTION OF FLAVOR-STABLE BEVERAGE

Attorney Name: Denise M. Kettelberger Phone No.: 612.371.5268 Sheet 32 of 32

2/32

Free T2N in wort (ppb)

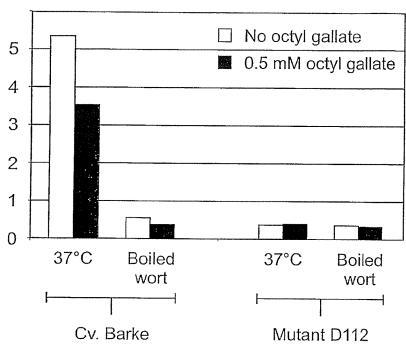


Fig. 23